

Yellow Floating Heart: An Exotic Aquatic Plant

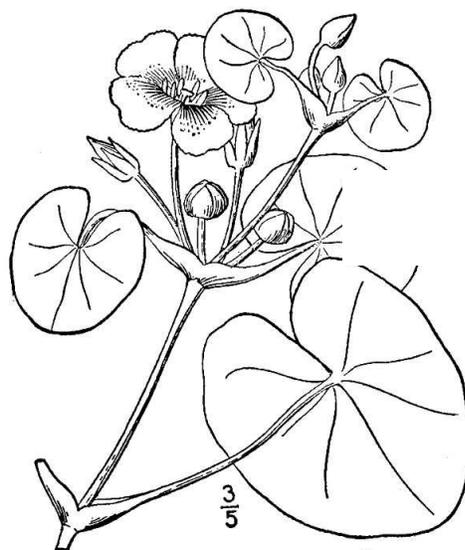
Nymphoides peltata



Description

- Yellow Floating Heart, an aggressive exotic aquatic plant, is native to Asia but now occurs in over 15 states.
- The shiny green leaves are heart-shaped and the size of a silver dollar. Leaves are arranged alternately along the stem, and oppositely on the flower stalks. Leaf margins are often rippled and purplish underneath.
- Two to five showy yellow flowers are supported several inches above the water on strong stalks. The flowers have 5 petals, with fringed margins, and are usually 3-5 cm in diameter.
- The rope-like stems are attached to adventitious roots on the lake's bottom.

Yellow Floating Heart



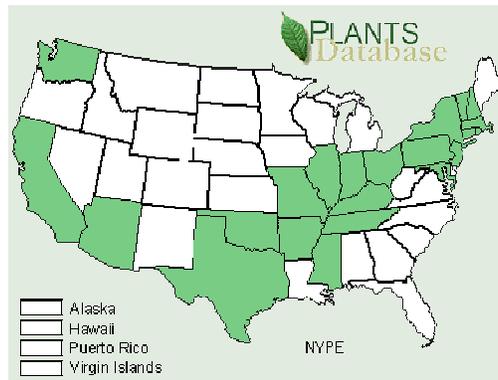
Habitat

N. peltata is a hardy and persistent species that is established in a wide range of aquatic habitats; however, this species prefers quiet lakes and slow moving streams.

- This species has been documented in Massachusetts and other areas of New England.

Distribution Map

Nymphoides peltata



Reproduction

N. peltata reproduces by both vegetative and sexual methods.

- Each plant produces one 2.5 cm long fruit that contains numerous seeds.
- Fragments of *N. peltata* containing leaves and a portion of the stem, are capable of sinking and developing into new plants.

Impacts and Threats Posed by Yellow Floating Heart

N. peltata is a very aggressive plant that is capable of rapid growth and spread. *N. peltata* can displace native species, reduce biodiversity, limit recreation, diminish aesthetic value, and decrease water quality and flow.

- Dense floating mats of Yellow Floating Heart can form on the water's surface, restricting light to the complete exclusion of other native plants, and decreasing the air exchange between the water's surface and the atmosphere.
- Thick floating mats can entirely prevent fishing, boating, swimming and other activities and the loss of recreational and aesthetic value can cause a decline in surrounding lake property value.
- Algae, a major component of the base of the food chain, can be shaded out by dense mats of Yellow Floating Heart. The resulting decline in algae can disrupt the entire food web in a lake.
- *N. peltata* may form dense single species stands that often do not provide ideal habitat or food for native wildlife and may limit access to the water for some species. These native wildlife populations may be forced to relocate or perish, ultimately resulting in a loss of biodiversity and a disruption in the balance of the ecosystem.
- Sediment levels increase with increasing *N. peltata* abundance.

Management Methods

Management methods currently include mechanical removal and herbicide application.

- Harvesting can greatly reduce the biomass in a water body, but this technique requires frequent repetition and is labor intensive.
- Some herbicides, including aquatic glyphosate show promising results, however, herbicides require permits, must be applied by a licensed applicator and may impact non-target native plants or animals.

Other Information

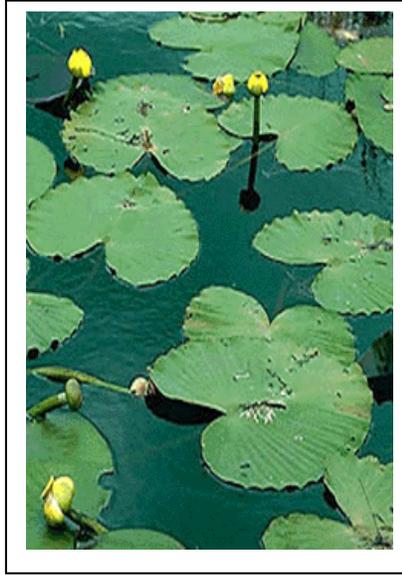
- Yellow Floating Heart is on the Massachusetts Prohibited Plant list (as of January 1, 2006)
- Informational websites:
 - <http://aquat1.ifas.ufl.edu/> (Center for Aquatic and Invasive Plants)
 - <http://nas.er.usgs.gov/queries/plants/PlantState.html> (USGS- search for exotic species by state)
 - www.ProtectYourWaters.net (Aquatic Nuisance Species national web site)

Yellow Floating Heart can occasionally be confused with native Yellow Water Lilly (*Nuphar variegatum*) and native Little Floating Heart (*Nymphoides cordata*). Yellow Water Lilly has very large leaves (6-8 inches) and button or cup-like flowers. Little Floating Heart has root bunches located on the stem just beneath the waters surface and lacks fringes on the leaf margins.

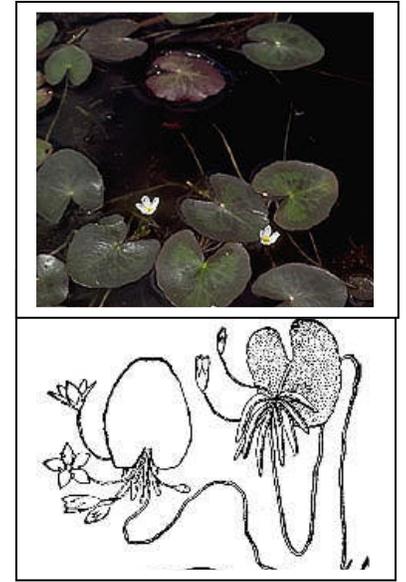
Yellow Floating Heart compared to Little Floating Heart and Yellow Water Lilly



Top: Yellow Floating Heart flower
Bottom: Yellow Water Lilly flower



Yellow Water Lilly (Cow Lilly or Spatterdock) has large 6-8 inch leaves and cup shaped flowers.



Little Floating Heart has white flowers (above) and root bunches on the stem below the leaves (below).

Prevent The Spread!

- Never release any plant or animal into a waterbody unless it came from that water body.
- Never empty aquariums or release garden pond plants into a local water body.
- Remove ALL plant matter and mussels from boat, trailer, anchors, fishing and dive gear.

References:

1) Literature References:

Washington State Department of Ecology

<http://www.ecy.wa.gov/programs/wq/plants/plantid2/descriptions/nympel.html>

Florida Center for Aquatic and Invasive Species: <http://plants.ifas.ufl.edu/eiccra.html>

2) Photographs were obtained from: <http://aquat1.ifas.ufl.edu/> except:

N. peltata flower obtained from: http://www.co.stevens.wa.us/weedboard/image_weeds/yfh1.jpg

Little Floating Heart photo obtained from: <http://plants.usda.gov/>

3) Line drawings were obtained from: http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=NYPE

3) The distribution map was taken from: http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=NYPE

For more information or to report a sighting, please contact:

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Michelle Robinson at: michelle.robinson@state.ma.us

Or visit the Lakes and Ponds web site at: <http://www.mass.gov/lakesandponds>

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